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AMERICAN DYESTUFF REPORTER

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AMERICAN DYESTUFF REPORTER

A Weekly Publication devoted to

DYESTUFFS, COLORS and ALLIED CHEMICALS

"Circulated Everywhere Dyestuffs are Used"

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THE BRITISH DYESTUFF INDUSTRY

By DR. H. LEVINSTEIN, M. Sc., F. I. C.

Editor's Note: The following is a digest of an address recently delivered by Dr. Levinstein before a convention of the British Society of Chemical Industry, and is as contained in the journal of that society. Practically everything which Dr. Levinstein says of the British dyestuff industry applies with equal force to conditions in America. It is our belief that anyone who still has any doubts as to the necessity of protecting our dyestuff industry will be convinced by a perusal of Dr. Levinstein's remarks.

THERE are four reasons why the success of the dye industry is vital to the State, each of which is in itself adequate.

(1) *A Key Industry.*—The reasons for the formation of British Dyes, Ltd., were clearly explained by Mr. Runciman in 1914 and 1915. "No one can tell what exactly will be the position after the war is over. Of this I am certain, if we go on being dependent in a large portion of our textile trade, whether cotton or wool, upon supplies (of dyes) which Germany has the power to cut off whenever she pleases, we leave these cotton and wool industries in a state of peril." It may be said against Mr. Runciman's view that our textile trades did well before the war, and now it is over there is not the same necessity for becoming entirely independent of Germany for the supply of dyestuffs. That view would be entirely erroneous. It is held by no one who is at all familiar with the methods and history of the big German aniline dye trust, created in 1915, but carrying out a policy long decided upon. Had the war come a little later our textile industry would have appreciated an acute difference in the conditions under which they received their supplies. To-day this trust, familiarly known as the I.G. (*Interessen Gemeinschaft*), is the most powerful weapon possessed by the Germans, for in peace, as in war, it was and is a tool of the German Government. The world monopoly possessed by Germany in dyestuffs was imperceptibly becoming a desperate menace to the freedom of our textile trades. It is of the first importance that this should be universally recognized. It is the main reason, apart from powerful sentimental considerations, which has made the dye consumer so enthusiastic a supporter of our industry since the war. It was ignorance of this vital fact, be-

cause the I.G. was inchoate and still concealed its character, and not indifference to it, which made him appear lethargic in assisting British dye manufacturers before the war.

(2) *National Security as a Guarantee of Peace.*—The dye industry is required for national defence as a guarantee of peace. I invite you to consider the war record of the German combine.

During the war the I.G. produced not only all the synthetic ammonia and nitric acid needed for the production of explosives, but also, with an unimportant exception, the whole of the chemical warfare products used by Germany in the course of the war.

It was entirely due to the I.G. that Germany was able, in spite of the blockade, to carry on the war after the end of 1915. Consider what this means. But for the possession of her dye industry, on which the German Staff did not even rely for munitions in 1914, the German resistance would have broken down in little more than a year for lack of nitric acid.

Can anything more clearly prove the military value of the German dye industry and the loss and destruction which it has caused us?

Apart from the production of nitric acid, oleum, and high explosives, the German dyestuff plants are of supreme importance for chemical warfare, because they are extraordinarily adaptable. Practically any organic product can be manufactured in them. This is due partly to standardization, but chiefly because the plant is often designed not for the manufacture of specific substances, but for the purpose of carrying out specific chemical operations. It was for this reason that most of the poison products used by the Germans were not made in one factory; certain operations were carried out in one factory, other operations could be carried out very conveniently in another plant. Thus in the case of mustard gas, thiodiglycol was prepared at Ludwigshafen, and the mustard gas itself at Leverkusen. The reason for this was that at Ludwigshafen there was already in existence a plant which could be used for the manufacture of thiodiglycol.

Where extensions were put down for the manufacture of poison gas the reverse holds good. The extensions for the purpose of war were adaptable for the purpose of peace.

Attached to one of their plants erected during the war, ostensibly solely for the purpose of war, are laboratories which contain a large luxuriously equipped lecture room, and which cost £200,000.

One may sum up the situation in this way: (1) The production of explosives in blockaded Germany was possible only owing to the Haber process belonging to the I.G., which was greatly developed by them during the war. (2) Each factory of the I.G. is either an arsenal or a potential arsenal of great size, capable of making great quantities of intermediate products and dyes one day and twenty-four hours later capable of being switched on to the manufacture of stupendous quantities of poison gas. If Germany were to remain the only country possessing such factories she would have every inducement to use them for aggression, for she would have no cause to fear reprisals. She might conceivably be certain in her own mind of effecting a strategic surprise. Therefore, the establishment of plants of equal magnitude in this country on a sound basis is one of the first guarantees of peace.

Do not misunderstand my argument. I do not advocate building dye plants for the purpose of making toxic gases. I do say that if the Germans retain their monopoly in dyestuffs they possess a monopoly in the rapid production of toxic gases, and that, in this event, the world is not safe for peaceful people.

(3) *New Industries Can Only Be Created by Organized Research.*—Very few people realize to what a small extent new industries arising out of new inventions have been created in England in recent years in comparison with those created abroad, particularly in Germany.

Before the development of the scien

tific industries we may fairly claim to have produced more important inventions than our competitors. We are an ingenious and inventive people. Today only a small proportion of world's inventions emanates from the inhabitants of these islands. Industrial inventions are now, as a rule, not the result of a flash of intuition, but of patient, methodical and skilled research carried out with big resources on a well-considered plan.

On the whole, that country will produce the most chemical inventions which has the greatest number of trained research chemists. In the fields of discovery, as on the battlefield, numbers will tell. As Pasteur well said: "In the fields of discovery chance always favors the researcher."

There is no industry except the dye industry which can support a large number of organized research chemists. This cannot be more clearly expressed than in the report by A. Mitchell Palmer, the Alien Property Custodian of the United States (chemical section): "The vital character of that industry (the dyestuff industry) was not due to its financial importance, since the consumption of dyes in the United States at the time of the outbreak of the war did not exceed $25,000,000 a year in cost to the consuming industries, nor to the fact that these dyes were absolute essentials to industries producing perhaps $2,500,000,000 of goods annually, but most of all to the fact that the technical skill and squipment provided by a successful dye industry furnished the means, and almost the sole means, to which every nation must look for advances in the application of chemical science to practical undertakings. No other industry offers a livelihood to any such large numbers of highly-trained scientific chemists, nor any such incentive to continuous and extended research."

The dye industry is thus a key indus-

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try in a new sense. It is the key to invention. It is necessary if we are to keep abreast of the world in the development of new industries arising out of chemical discoveries.

The reaction of this on the chemical schools of our universities is of extraordinary importance, because the dye industry can provide a large outlet for highly-trained research chemists. As the dye industry lives by research, new buildings and plants are continually being erected for the manufacture of new products. This entails the employment of more chemists, who, as a rule, are drawn from the research departments, and their replacement by new research students from the universities. For the first time young chemists can be assured of a career in industrial research, the most fascinating but elusive and difficult work open to our profession. The bond between organic chemical schools and the dyestuff industry is, therefore, bound to be a close one. The development of the industry will give an enormous impetus to the study and research in organic chemistry at academic institutions.

(4) *Political Importance of the Dyestuff Industry.*—The German dye industry was the most potent weapon possessed by Germany for peaceful penetration. In America, Mitchell Palmer shows that the dyestuff sales organization of the I.G. firms was used by the German Government for espionage both before and during the war. The peaceful penetration of Russia and other foreign countries by Germany was one of the causes which led to the war.

It is not safe for us to permit the Germans to monopolize the up-country business with tins of dyestuffs among the natives of India, and of the East in general, for political reasons. It is our duty to afford an alternative supply of dyestuffs, besides German dyestuffs, to those of our Allies who do not possess an adequate home industry. To secure commercial freedom for our textile trade and that of our Allies is as important as to secure political freedom.

Summary and Conclusion.—These are the reasons which render the development of our industry so vital in the coming struggle. They may be summed up in the following propositions:

(1) It would be madness after the close of this terrible war, fought to secure our ideals of political freedom, not to make ourselves economically free from Germany.

(2) It would be folly to leave Germany the sole possessor of factories, potential arsenals, which because they were unique in the great war enabled her to carry on this war for three additional dreadful years.

(3) It is impossible for us to maintain our commercial supremacy if we throw away the one chance of organizing the inventive talent of our chemists.

It follows that enormous responsibility rests upon the chemists of this country. The real war work of our chemists lies yet before them, for it rests with chemists to secure in the next few years the opportunities the soldiers won for us.

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TEXTILES comprise fabric and color. The fabric is right when the color is right. They stand or fall together. This is why the dyestuff producer must consider his work as a factor in a large industry.

The textile industry is a great industry. Its annual output is valued at more than one billion dollars. But it is singularly dependent upon the dyestuff producer. Fabric without color is unthinkable.

The National Aniline and Chemical Company, Inc., recognizes this relation to the textile consumer. It is here to serve the textile industry. It is dependent upon that industry for encouragement and for existence. If it does not serve that industry adequately it will have no reason for existence.

The production of dyestuffs is a share in the work of a giant industry.

National Aniline & Chemical Company

INCORPORATED

21 Burling Slip, New York

Works: Buffalo Brooklyn Marcus Hook

AMERICAN DYESTUFF REPORTER

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A. P. HOWES, Publisher
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URGE FAVORABLE ACTION ON LONGWORTH BILL

Although no official action on the Longworth bill may be looked for in the Senate until after the Peace Treaty has been disposed of, the interval of seeming inactivity is, nevertheless, being employed by interests which both favor and oppose the passage of the measure to urge their respective views upon individual Senators.

Representatives of many large dyestuff manufacturing interests have been in Washington during the past week or ten days, and, although nothing of a definite nature can be announced, we understand that much progress has been made in the way of persuading various Senators of the advisability of adopting the bill in substantially the same form as it was passed by the House.

There has been some talk of further modification of the measure as regards the licensing feature, the most practical suggestion, and the one in which we most heartily concur being that the licensing powers be vested in a specially appointed committee which shall be small in size and shall number among its members no representative of either manufacturing or consuming interests, and which shall devote its time exclusively to the consideration of applications for the importations of dyestuffs.

We earnestly urge upon all persons who are interested in the speedy passage of the Longworth measure by the Senate that they leave no stone unturned to see that their representatives in the Senate are advised of their wishes in this matter. After all is said and done, we enjoy a truly republican form o government, and it is undoubtedly th intention of our lawmakers to reflec the wishes of their constituents in so fa as is possible, and unless we make ou wishes known it is not to be expecte that our representatives can properl divine them.

A DYESTUFF CYCLOPEDIA

Elsewhere in this issue will be foun a communication from Bradford Web ster which was stimulated by an ed torial appearing in last week's REPORTE which pointed out the desirability o America having some sort of a com parative file of dyestuffs which woul be available to consumers.

The plan, as suggested by Mr. Web ster, appears to us in its main feature to be practical. It is, at least, a definit suggestion in the right direction. Ther is no doubt that any attempt to pu such a plan into operation would hav to overcome a great deal of inertia o the part of our dyestuff manufacturers but we feel certain that if such a sys tem could once be established it woul prove of inestimable value to consumer of dyestuffs in all fields.

The suggestion made by Mr. Webste that each concern manufacturing dye stuffs furnish to a central distributin agency a thousand sample cards o each color manufactured by it, at it own expense, would, of course, entai the outlay of considerable money on th part of a manufacturer who produces any wide range of colors, but we hav no hesitation in predicting that the ad vertising value to be obtained from suc an outlay would justify the expense.

As to securing co-operation for th plan, there is no doubt whatever that great majority of the concerns whic buy large quantities of dyestuffs woul be very glad to avail themselves of suc a service at the modest cost which Mr Webster suggests. The only questio in our minds as to the feasibility of th plan is whether or not the leading man ufacturers of dyestuffs could be in duced to endorse it. It is our opinio that if two or three of the larger manu

DU PONT AMERICAN INDUSTRIES

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A SELF-CONTAINED American dyestuff industry means, first of all, *protection* to America and American industries.

Protection to the nation in time of war in that it furnishes the plants, the technique and the intermediate products for the manufacture of high explosives and poisonous gases.

Protection to our one source of supply for the synthetic medicinals that are the chief reliance of medical science in relieving pain and in fighting disease.

Protection to the textile, leather, paper, printing ink, paint and other dyestuff consuming industries producing over two and a half billion dollars of manufactured goods a year, employing over one million people and representing upwards of two and one-half billion dollars in invested capital.

Protection to industries indirectly dependent on an uninterrupted supply of dyestuffs for their maintenance producing over three billion dollars of manufactured goods a year, employing over a million people and representing nearly two billion dollars in invested capital.

In developing and safeguarding, with every means at our disposal, a self-contained American dyestuff industry, American manufacturers are therefore laying and preserving the very keystone of our national and industrial independence.

E. I. du Pont de Nemours & Co.
Dyestuffs Sales Dept.
Wilmington ∴ Delaware

Branch Offices
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Philadelphia *Chicago*
Charlotte, N. C.

DU PONT

facturers were to furnish such a central bureau with sample cards covering their complete range of colors the smaller manufacturers would at once fall in line and so make the cyclopedia of great value for purposes of comparison as well as for reference.

The source through which the sample cards would be collected and distributed is, to our mind, a matter of comparative unimportance, so long as it was assured that the organization was distinctly impartial and conducted in a thoroughly businesslike manner.

FORMALITIES FOR IMPORTING GERMAN DYES

The Textile Alliance, Inc., 45 East Seventeenth Street, New York, appointed by the War Trade Board Section of the State Department as the sole official agency for the importation of vat dyes from Germany to consumers in this country, has announced the plan that will be followed in the distribution of the color stuffs to consumers. The instructions given cover the purchase, importation and distribution of the products.

The War Trade Board Section has issued to dye consumers allocation certificates for the purpose of enabling them to import the vat dyes necessary for their requirements for the six months' period from October 15 to April 15, 1920. In the meantime negotiations between the representatives of the Allied and Associated Governments and of the German Government have assured a substantial supply of the required dyes.

The Textile Alliance proposes to accept from the consumer vat dye certificates issued by the War Trade Board for such dyes in amounts not exceeding those specified in such certificates. Applications for licenses will be secured through the Alliance, covered by the allocation certificates indorsed by it, and all details connected with the purchase, terms of payment, their shipment and distribution will be performed by the organization.

When the allocation certificate is indorsed by the Alliance and the order form is filled out, the application will be filed with the War Trade Board.

The approximate cost of the dyes and all charges will be submitted to the Alliance by the consumer and a check will accompany the order. The Paris representative of the Alliance will then proceed with the purchase. In the event that the entire amount of dyes called for by the order is not obtainable, the supply will be pro rated.

The entire transaction will be carried out at cost and without profit to the Textile Alliance, but to meet the estimated expenses 15 per cent will be charged on the amount of the delivered cost, including duty. Any unexpended balance of the funds remitted for expenses will be returned pro rata. All purchasers will be required to absolve the Alliance from liability arising in connection with the importation, sale or delivery of the dyes.

The Newark College of Technology, Newark, N. J., announces the establishment of a special course on corporation chemistry. The new course will aim to instruct in the relation of business economics to industrial chemistry.

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THE CERTIFIED CHEMICAL CORP. N.Y.

AN AMERICAN DYESTUFF CYCLOPEDIA

By Bradford Webster

The editorial in the AMERICAN DYESTUFF REPORTER of October 27 has suggested once more the importance of a single reliable source of information regarding available dyestuffs in the United States. The advantages of such a source of information or cyclopedia of dyestuffs have been obvious for years. The difficulty has been to get a thoroughly practical plan. So far as I know, no such plan has been in operation by any manufacturer, dealer, or user of dyestuffs. The plan I am about to suggest is the result of handling twenty or thirty thousand samples, of having published a loose-leaf lawbook, of having designed and made a loose-leaf filing binder, and of having considered this problem many times with others who have been under great pressure in the same circumstances. We all wish we could have started with it in some such form four years ago.

Let us start with a single sheet of paper for each dyestuff produced by each manufacturer. The sheet should be of good paper, probably 6 by 8 inches in size, doubled on the left edge to allow for the attached pieces on the sheets, and punched through the doubled portion for binding. In the upper right hand corner should be printed the number of the sheet, the name of the color so given as to indicate in what general class it belongs, and the name of the manufacturer. In the upper half of the sheet should be fixed two or more pieces of dyed cotton, wool, silk, or union fabric of standard weight and character, with a printed statement under each piece showing the percentage of dyestuff to weight of fabric. In the lower portion of the sheet should be printed the identifying solutions and reactions, and further essential brief instructions.

The manufacturer should have the dyed pieces made by a competent and disinterested testing laboratory, whose chemists and sample dyers have no connection with any manufacturer, dealer or consumer. To be most useful for comparison the dyeings should all be made in the same place and under similar conditions.

The manufacturer should have one thousand sheets printed for each color he makes, have the dyed pieces mounted with good adhesive, and deliver them to the publisher and distributer.

The numbering of the sheets would be determined by the classification adopted. An intermittent or broken number system might well be employed.

The following is suggested as a practical classification:

A. 1. Ordinary Direct Colors;
   2. Developed Colors.
B. Sulphur Colors.
C. 1. Ordinary Acid Colors;
   2. Chrome Bottom Acid Colors;
   3. Top Chrome Acid Colors.
D. Basic Colors.
E. Vat Colors.
F. Oil Colors.

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A Color of Unexcelled Fastness to Fulling and Potting

Newark Chrome Black FF
A Color of Excellent Fastness to Fulling and Light. Suitable for Raw Stock, Yarn and Piece Dyeing

G. Miscellaneous Aniline Colors.
H. Natural Dyestuffs.

Under each heading the dyestuffs would be arranged alphabetically by general color names, such as Blacks, Blues, Browns, et cetera.

To illustrate how the numbering would be done, one National Direct Black would be sheet No. 1, a second one sheet No. 2, a du Pont Direct Black No. 3, another No. 4, a Newport No. 5, et cetera. Then numbers would be skipped up to 35 or 50, and the first Direct Blue would be sheet or page No. 50. If there were five Direct Blacks in the original edition, the next new one coming out would be numbered 6. If the Direct Blues ran from 50 to 62, the next new one would be 63. Before a manufacturer had his thousand sheets printed, the distributer would furnish him the proper sheet number to have printed with the other printing on the sheet on each of the thousand copies of the page devoted to each color. By this system, the position of a new sheet in the cyclopedia would be obvious from the number. No other loose-leaf book system that I know of is as simple, as fool-proof, as direct, and as speedy.

The distributer and publisher would gather in 1,000 sets, have them punched and inserted in two or more loose-leaf binders per set. The binders would be of very compact and convenient size, the sheets being six inches on the binding side after doubling the edges by about eight inches wide.

Monthly or bi-monthly thereafter, he would distribute to each subscriber one copy of each new sheet representing a new color.

Manufacturers would gladly furnish these sheets at their own expense for distribution because it would be by long odds the most inexpensive advertising they could get.

All substantial consumers of dyestuffs and dealers would gladly pay $25 for the original volumes and $10 to $15 yearly for the new sheets, because it would cost them from five to fifty times as much to get such authoritative and disinterested information otherwise.

Manufacturers furnishing more than a given number of sheets would receive the original edition and the periodic service without charge. Those furnishing less than that number would receive a discount in proportion to the number furnished.

American dyestuffs could, of course, only be entered by the manufacturer. In case of foreign manufacturers, either the authorized American agent or a group of original and substantial importers would prepare but one set of sheets for each color from one manufacturer, like Sandoz, for example.

No mixtures would be listed.

With regard to the disinterested and competent dyeing chemist, there are few to be found. Probably one and possibly two in New York, absolutely disconnected and fully competent, could be found. In the case of vat colors, it might be necessary to take

Fast Chrome Blue Black
Cloth Scarlet G **Naphthol Green B**
Bismark Brown R **Metanil Yellow**
Fast Purple B **Ponceau 3RB**
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the dyeings from the manufacturer of the dyestuffs.

The publication and distribution of works of this kind with a limited field of 500 to 1,000 users is a thankless and often profitless task. However, there are probably a few who appreciate the need, understand how to meet it, and have the welfare of the industry sufficiently at heart to be willing to contribute the time, effort, and wounded sensibilities to make the American Dyestuffs Cyclopedia a work worth while, and possibly a work of high art.

A RAPID PROCESS OF TURKEY RED DYEING

By P. Montavon

When I commenced my career early in 1874 at Thann, an Alsatian foreman had just begun to dye cloth pekins and damasks in self-shades for furniture cloths. The usual colors were yellows, reds, clarets and similar shades obtained by dyewoods. The method followed consisted in fixing hydrate of alumina on the fiber by padding in acetate of alumina, drying with the goods stretched on hooks in the hot flue, treating with silicate of soda and chalk, thoroughly rinsing, then dyeing in the jigger with the dyewoods. For instance, the yellow was got by using wood, quercitron and fustic. For red a mixture of fustic and wood with Lima or sandalwood. For clarets, fustic with a little logwood, and for garnets Lima wood with large proportions of fustic and logwood.

At the same time another foreman dyer from Rouen had installed in the same establishment the dyeing of very dark puce shades on satin zanella for umbrellas. This was done by mordanting with alumina and iron, and dyeing in the jigger with Brazil wood and logwood.

In spite of the large number of jiggers used in this work the output of these articles was relatively small because of the very full shades that were demanded and especially the length of time it took to exhaust the bath. A method therefore was sought to increase the yield by finding a quicker process of dyeing. I succeeded to begin with in reducing the time by half by making the dye bath alkaline, then, continuing my experiments in this line I quickly noted that the dyeing could be done very rapidly by using concentrated baths sufficiently alkaline to dissolve entirely all the coloring principles contained in them. This suggested the idea of dyeing on the padding machine in short baths that could be reinforced for each new roll of cloth.

Moreover, this method of working enabled us to calculate how many passages through the bath the mordanted cloth would need to take up a given quantity of dissolved color. The batched cloth kept in the heat and caused the metallic hydrates to be completely fixed, so that the dye-

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ing was done with an economy of labor, coloring matters and steam.

To make the dye bath alkaline ammonia was preferably used, in order not to strip the hydrate of alumina fixed on the fiber, which would be done if caustic lyes were employed.

Customers at that time insisted on shades faster to light than those given by the various red dyewoods, and at the same time cheaper than those obtained with alizarine. A mixture of solutions in ammonia of Brazil wood and alizarine allowed us to give satisfaction in the matter of reds, and the addition of hematine to this mixture produced a garnet with the desired properties. Also the shades that were obtained were livelier, fuller and much more resistant to light than those got in the ordinary ways.

Turkey Red

Towards the end of 1876 after many changes of products and many experiments and modifications, we commenced at Thann to turn out a fairly good Turkey red by the following process.

The bleached cloth in the dry state was padded twice in sulphoricinate 1:10, then dried in the hot flue with a horizontal run heated by steam plates. After drying the goods were padded in alumina mordant prepared with 30 kilos of alum, 3 kilos of acetate of lead, and 750 grams of powdered chalk per 100 liters of water, and allowed to remain on the rollers of the padding machine for several hours. Next the pieces were treated in the jigger in a bath of silicate of soda and chalk, and thoroughly washed.

The dyeing was done on another jigger with a bath of 4 kilos of 20 per cent alizarine, 1 kilos 300 grams of sulphoricinate, and 3 kilos of bran per 50 kilos of cloth. The bath was brought to the boil which was kept up until the bath was exhausted. After rinsing and drying the dyed woods were steamed for two hours then treated in a boiling soap bath with the addition of tin salts. This step in the process is best done in the closed kier.

A year later, having completed my military service, I found the Turkey red department completely separated from the other parts of the dyeworks and had nothing more to do with it. I should, therefore, not have been able at that time to apply my ideas for the rapid dyeing of alizarine red, but for the fact that the dyeing of furniture cloths was still part of my work. The following is the process I used to dye several pieces of damask in Turkey red which were required in garnet shades for upholstery use.

Rapid Process

Two passages through the padding machine in acetate of alumina 8 deg. B.; dry stretched on the hooks in the hot flue; treat in the jigger with silicate of soda and chalk, and thoroughly rinse and squeeze.

Dye on the padding machine in a boiling bath with 3 kilos of 20 per cent alizarine and a half liter of ammonia per 40 liters of bath. A batch of 30 kilos of cloth is passed three times through the bath, and then allowed to rest for an hour. It is then given a passage through hot water, padded twice through a solution of sulphoricinate 1:10 dried, steamed for two hours, and finally soaped in the boiling bath for an hour.

As a result I obtained a very lively and full Turkey red as resistant as that obtained by the process described above. Samples taken at various stages

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of the process after dyeing had the following characteristics:

After padding in alizarine, washing and drying the red was very intense and did not bleed in boiling water.

After soaping at the boil the red was much more lively.

Steaming increased this effect.

Oiling after dyeing, followed by drying and steaming, gave a very lively dark red. When this was soaped at the boil for an hour with the addition of tin salts it became a very full and magnificent Turkey red having all the desired fire, and passing all the tests of a Turkey red obtained by the usual process.

In dyeing on the padding machine in alizarate of ammonia it is necessary to avoid all contact with copper or iron. The squeezing rolls must be covered with India-rubber. The trough and the guide rolls must be of wood with their iron spindles thoroughly well tinned. These spindles should turn in ebonite lined sockets. The heating of the bath should be done by means of a well-tinned steam coil. Now that aluminum is available industrially the spindles and the steam coil could be made of this metal.

It may be remarked that in order to avoid drying after mordanting I tried to fix the alumina on the fiber in the state of tannate by passing the cloth first through an alkaline bath of tannin and then through the bath of alumina. The tannate of alumina, however, did not dye well in alizarine. I also tried to fix the alizarine on the fiber by double decomposition, by impregnating the cloth with alizarite of ammonia, and then passing it through the alumina salt, but the result was not encouraging. Nevertheless experiments in this direction should be persevered.—*Rev. Gen. des Mat. Col.*

The Neversink Dyeing Company has purchased the Penn Dye & Bleach Works, at Pottstown and New Cumberland, Pa. The office remains at 500 Penn Street, Reading, Pa.

AMERICAN DYE MAKERS BURNING BRIDGES

American manufacturers of dyestuffs are expending millions of dollars to meet the expected competition of Germany, according to a recent bulletin of the American Chemical Society. One large corporation, it is said, has already spent $1,800,000 in experimenting for the preparation of much desired colors. The complex problems of factory management and large scale production now facing the dye manufacturers of this country were discussed at the meeting of the newly organized Dye Section of the American Chemical Society.

"The great cost of promoting a native dye industry," says the bulletin, "comes in putting into practical application on a large scale the work of the laboratory. Of the hundreds of dyes which were manufactured abroad before 1914, there is scarcely one which could not be made by American chemists on a small scale under laboratory conditions. When the wholesale opera-

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tion begins, however, there are many obstacles which can only be overcome by practice. For example, one of the largest plants in America expended in one year $845,000 in developing a factory process of a certain dye.

"The American dye industry has come up out of the tribulations of the war. Owing to the ability of Germany to dump surplus products on the market before the war that country virtually enjoyed a monopoly in dyestuffs. The Americans now are able to provide most of the colors required by the various industries of the United States and are determined that they will finally develop the process for vat dyes so that they will be able to meet all competition."

. NOTES OF THE TRADE

The Anglo-California Aniline Corporation, with a capitalization of $1,000,000, has been organized at Reno, Nev., for the purpose of operating shale properties in that territory and refining the products.

According to the Algemein Handelsblad, the annual report of the Badische Anilin und Sodafabrik, at Ludwigshafen, shows a gross profit of 67,600,000 marks for 1918, in comparison with 58,200,000 marks for the preceding year. General expense increased from 7,900,000 marks to 15,300,000 marks. There was written off for depreciation and reserve 40,600,000 marks, as against 21,200,000 for the preceding year.

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The Textile Color Card Association has now ready for distribution its shade card for the spring season of 1920. The copy of the card which we have received shows fifty-six shades on silk and twelve shades on wool, as well as twelve combination colors, producing changeable effects, on silk. The solid colors are given new and seasonable names and the combination effects are represented by letter.

The suit of H. A. Metz against the Alien Property Custodian, which was to have been argued last week before Judge Hough of the United States Circuit Court, has been indefinitely postponed.

Exports of dyestuffs from the United States for the month of August exceeded $1,100,000 in value and were divided as follows: Aniline dyes, $761,000; logwood extracts, $60,000; other dyestuffs, $350,000.

The announcement recently made by J. S. Young & Co., Hanover, Pa., of the retirement from active business of Charles R. Delaney, who has been associated with this company for many years, was received by the dyestuff fraternity with marked regret. Mr. Delaney has long been one of the leading figures of the country in the natural dyestuff industry. It is understood that Mr. Delaney will take an extended trip around the world for the purpose of studying the sources of natural dyestuffs at their points of origin.

The Philadelphia Textile School opened its fall session with the largest enrollment in its history, the increase being at least 30 per cent over that of the next largest class.

The thirty-seventh annual meeting of the National Association of Woolen and Worsted Oversees will be held at the American House, Boston, on Saturday, November 15.

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